

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-16 (Canceled).

Claim 17 (Currently Amended): A process for preparing one or more iodinated organic substances having a molecular mass of less than 2000 (substances (S)) using:

(A) at least one free-radical-generating substance chosen from peroxides, diazo compounds, dialkyldiphenylalkanes, substances derived from tetraphenylethane, boranes and iniferter substances comprising at least one thiuram disulphide group,

(B) at least one organic substance ~~containing~~ comprising at least one ethylenic double bond, capable of adding a free radical to its ethylenic double bond,

(C) molecular iodine,

which comprises ~~the steps according to which:~~

(1) introducing at least a fraction of (A), at least a fraction of (B) and at least a fraction of (C) ~~are introduced~~ into a reactor, ~~and then~~

(2) causing the contents of the reactor ~~are caused~~ to react, while introducing therein the possible remainder of (A), the possible remainder of (B) and the possible remainder of (C), until ~~a moment is reached when the content of the reactor is~~ comprises a mixture comprising one or more substances (S) [mixture (M)], and then

either the contents of the reactor are caused to react until the quantity of (B) consumed by the reaction no longer changes (variant (1)), or the reaction in progress is stopped (variant (2)),

wherein in variant (1), the number of moles of (C) introduced into the reactor expressed relative to the number of moles of (A) introduced into the reactor is greater than or

equal to 90% and less than 200% and the number of moles of (C) introduced into the reactor expressed relative to the number of moles of (B) introduced into the reactor is more than 0.5% and less than 200%, and

wherein in variant (2) the number of moles of (C) introduced into the reactor expressed relative to the number of moles of (A) introduced into the reactor is greater than or equal to 20% and less than 100% and the number of moles of (C) introduced into the reactor expressed relative to the number of moles (B) introduced into the reactor is greater than or equal to 0.01% and less than 5%.

Claim 18 (Previously Presented): The process according to Claim 17, wherein the substance(s) (S) have a molecular mass of less than 1000.

Claim 19 (Previously Presented): The process according to Claim 17, wherein the substance(s) (S) have a number-average molecular mass of less than 500.

Claim 20 (Cancelled)

Claim 21 (Cancelled):

Claim 22 (Cancelled):

Claim 23 (Currently Amended): The process according to Claim ~~17~~ 22, comprising variant (2), wherein ~~the moment when the reaction in progress is stopped is that~~ when the ~~colour~~ color of the contents of the reactor changes from a dark ~~colour~~ color to a light ~~colour~~ color.

Claim 24 (Cancelled)

Claim 25 (Cancelled)

Claim 26 -36 (Cancelled)

Claim 37 (New): The process according to Claim 17, comprising variant (1).

Claim 38 (New): The process according to Claim 37, wherein the number of moles of (C) introduced into the reactor expressed relative to the number of moles of (A) introduced into the reactor is greater than or equal to 100% and less than 150% and the number of moles of (C) introduced into the reactor expressed relative to the number of moles of (B) introduced into the reactor is more than 0.5% and less than 150%.

Claim 39 (New): The process according to Claim 17, comprising variant (2).

Claim 40 (New): The process according to Claim 39, wherein the reaction in progress is stopped by cooling the contents of the reactor.

Claim 41 (New): The process according to Claim 39, wherein the number of moles of (C) introduced into the reactor expressed relative to the number of moles of (A) introduced into the reactor is greater than or equal to 20% and less than 90% and the number of moles of (C) introduced into the reactor expressed relative to the number of moles (B) introduced into the reactor is greater than or equal to 0.1% and less than 5%.

Claim 42 (Previously Presented): The process according to Claim 37, further comprising isolating at least one substance (S) from the mixture (M) after the contents of the reactor are caused to react until the quantity of (B) consumed by the reaction no longer changes.

Claim 43 (Previously Presented): The process according to Claim 39, further comprising isolating at least one substance (S) from the mixture (M) after the reaction in progress is stopped.

Claim 44 (New): The process according to Claim 17, wherein all of each of (A), (B) and (C) are introduced into the reactor in (1).